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| APPLICATION NO | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO | CONFIRMATION NO |
|---|---|---|---|---|
| 09/394,647 | 09/08/1999 | JEAN-PIERRE GAUTIER | 2988-0651 | 4586 |

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| EXAMINER | |
|---|---|
| SODERQUIST, ARLEN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1743 | |

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Application No. | Applicant(s) |
|---|---|
| 09/394,647 | GAUTIER ET AL. |
| **Examiner** | **Art Unit** |
| Arlen Soderquist | 1743 |

# Office Action Summary

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 and 4-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11* is/are allowed.

6)☒ Claim(s) *1,4-10 and 12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

1. Applicant is advised that should claim 10 be found allowable, claim 22 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 4-10 and 12-22 as they depend from claims 1 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann in view of Hutchings.

In the paper Hofmann presents a comparison of spectrophotometric methods for measuring chlorine dioxide in drinking water. The recognition that chlorine disinfection of drinking water may not be effective in controlling such as Cryptosporidium may lead to the greater use of stronger alternative disinfectants, such as chlorine dioxide. Typical chlorine dioxide residual concentration requirements for disinfection may extend to less than 0.1 mg $L^{-1}$, thus requiring very good quantitation methods for optimal process control. Traditional methods have been cumbersome and sometimes inaccurate. This study examined three spectrophotometric methods for measuring chlorine dioxide in the <0.1 mg $L^{-1}$ to 2 mg $L^{-1}$ range, using acid chrome violet K (ACVK), lissamine green B, and amaranth reagents (both ACVK and amaranth are azo dyes). Figure 2 gives specifics about the each of the reagents including the buffers used. Each methods was assessed using both laboratory reagent water and various

natural waters to identify the respective linear range, method precision, and the possible interference from natural color due to aqueous organic matter. Interferences arising from the presence of chlorine, chloramines, chlorite, chlorate, and permanganate were also evaluated, along with potential need to correct for temperature changes. Page 768 in the second to last paragraph teaches the presence of ammonia in the buffer specified for the methods used in the study which was expected to react with chlorine to form chloramines (also see page 762, first and second full paragraphs of column 2). Hofmann does not teach the presence of a borate buffer.

In the patent Hutchings teaches aqueous compositions containing a colorant and an alkali metal halogenite. Aqueous cleaner compositions containing an alkali metal halogenite, for example, $NaClO_2$; a stabilizable colorant; and a stabilizing amount of a stabilizer compound selected from the group consisting of alkali metal carbonates, borates and mixtures thereof. The preferred embodiment further includes an anionic or anionic fluorocarbon surfactant. In the background Hutchings teaches that conversion of an alkali metal halogenite such as sodium chlorite into chlorine dioxide is known to occur at a pH of less than 9.0. When this happens coloring agents used in the cleansers fade creating problems associated with the lack of color. Column 4 lines 1-12 teach several dyes including azo-dyes that are known to be affected by this. The examples show several situations in which the production of chlorine dioxide is prevented by the use of a borate buffer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the borate buffer Hutchings into the Hofmann reagent and method to raise the pH above 9 because of its known ability to stop the conversion of a compound such as sodium chlorite into chlorine dioxide as taught by Hutchings which would have been expected to give incorrect results as a known interferent as shown by Hoffmann. Concentrations and methods of preparation would have been results effective variables that the Court has held to be within the skill of one of ordinary skill in the art (*In re Boesch*, 205 USPQ 215 (CCPA 1980)).

4. Applicant's arguments filed December 3, 2003 have been fully considered but they are not persuasive. Examiner agrees that the Hofmann reference does not anticipate the claims. However relative to the Hofmann reference not needing any additional buffer the Hutchings reference is clearly relevant since it shows that at a pH of less than 9, chlorite ion will be

converted into chlorine dioxide. Clearly this would have been recognized by one of skill in the art as a source of interference by converting a compound that would have been expected to be present in the samples being measured into the measured compound, giving a value that is greater than what was originally present in the sample. Thus minimally the Hutchings reference shows that a pH of greater than 9 is required to prevent chlorite ion, that would be expected to be present based on the testing by Hofmann for its interference, from converting into chlorine dioxide and causing the measurement to be incorrect. The fact that Hutchings uses a borate buffer for this purpose would have led one of skill in the art to include it in the Hofmann buffer for its known buffering properties such as obtaining a pH that will prevent chlorite from being converted into chlorine dioxide. It should also be pointed out that in both Hofmann and Hutchings, the color change in the azo dyes is occurring due to the presence of chlorine dioxide. Thus again the teachings of Hutchings are relevant to the Hofmann reference. It should be pointed out that claim 1 has been amended to include two specific dyes, one of which is clearly taught in the Hofmann reference and the other that has been indicated as allowable in the composition of claim 11. Thus if applicant limits the claims to the composition of claim 11 and the methods which depend therefrom, the claims would be allowable baring discovery of a new reference or reference combination that either anticipates or obviates the composition of claim 11.

5. Claim 11 is allowed because the prior art does not teach or fairly suggest the composition including the specifically claimed dye.

6. Applicant's arguments, see pages 1 and 3, filed December 3, 2003, with respect to the Knechtel and Steinman references have been fully considered and are persuasive. The rejection of the claims with these references has been withdrawn because the references fail to teach or fairly suggest the claimed composition including the specifically claimed dyes.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose current telephone number is (571) 272-1265 as a result of the examiner moving to the new USPTO location. The examiner's schedule is variable between the hours of about 5:30 AM to about 5:00 PM on Monday through Thursday and alternate Fridays.

A general phone number for the organization to which this application is assigned is (571) 272-1700. The fax phone number to file official papers for this application or proceeding is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arlen Soderquist

February 23, 2004

PRIMARY EXAMINER